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| 10/520,889 | 08/01/2005 | Tsuyoshi Koike | TIC-0083 | 6373 |

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WOODCOCK WASHBURN LLP
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

| EXAMINER | |
|---|---|
| KURR, JASON RICHARD | |
| **ART UNIT** | **PAPER NUMBER** |
| 2615 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/520,889 | KOIKE ET AL. | |
| | Examiner | Art Unit | |
| | Jason R. Kurr | 2615 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2 and 4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

Claim 3 has been cancelled and thus will not be further considered by the Examiner.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manlove et al (US 4,959,859) in view of Ohsawa (US 4,049,918).

With respect to claim 1, Manlove discloses a separation adjustment circuit (fig.1) for adjusting an intensity ratio between a sum signal and a difference signal in a stereo composite signal and for increasing a separation degree between a stereo right signal and a stereo left signal (col.1 ln.47-62), comprising: a sum signal retrieving unit (fig.1 #14) retrieving a sum signal from the composite signal; a difference signal retrieving unit (fig.1 #12) retrieving a difference signal from the stereo composite signal; a mixing unit (fig.1 #16) mixing the sum signal and the difference signal, thereby obtaining a stereo right signal and a stereo left signal (col.2 ln.17-20); a first adjustment unit (fig.1 #18) adjusting a current amount that flows in the sum signal retrieving unit or the difference signal retrieving unit and adjusting an intensity of the sum signal or an intensity of the difference signal (col.2 ln.21-32, col.3 ln.15-46); and a generation unit (fig.1 #20)

generating a control signal for controlling an adjustment operation of the first adjustment unit (col.2 ln.32-38); an output stage (fig.1 "output of #16").

Manlove does not disclose expressly wherein the circuit further comprises a resistance connected to the output stage, and a second adjustment unit connected in parallel to the resistance.

Ohsawa discloses a circuit for the control of separation between left and right channels (col.3 ln.65-68, col.4 ln.1-7) wherein a resistance (fig.3 "resistance connecting nodes P1 and P2") is connected to an output stage of the circuit; and an adjustment unit (fig.3 #5) being connected to the resistance in parallel and adjusting a current amount flowing in the resistance (col.4 ln.60-68).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the separation control circuit of Ohsawa as a second adjustment circuit on the output stage of the invention of Manlove.

The motivation for using the separation control circuit on the output of Manlove's would have been to allow a user to manually adjust the degree of separation between the audio channels hence giving a skilled user more control of the output signals.

With respect to claim 2, Manlove discloses the separation adjustment circuit according to claim 1; wherein the first adjustment unit comprises a plurality of transistors (fig.2 #44,46,48,50) and a selection unit (fig.2 #38) selecting the plurality of transistors based on the control signal, and it adjusts an intensity of the sum signal or an intensity

of the difference signal based on a total current amount of the transistors selected by the selection unit (col.3 ln.34-45).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manlove et al (US 4,959,859) in view of Ohsawa (US 4,049,918) and in further view of Ishiguro et al (US 4,972,482).

With respect to claim 4, Manlove discloses the separation adjustment circuit according to claim 1, however does not disclose expressly wherein the control signal is generated based on a separation degree between a stereo right signal and a stereo left signal that are outputted from the separation adjustment circuit.

Ishiguro discloses a separation adjustment circuit (fig.7) wherein a control signal (fig.7 "output of #56) is generated based on a separation degree between a stereo right signal and a stereo left signal (fig.7 #46,47) that are outputted from the separation adjustment circuit (col.10 ln.6-30).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the feedback circuit of Ishiguro to update the control signal supplied by the generation unit of Manlove.

The motivation for doing so would have been to provide the system of Manlove with an accurate readjustment signal in order to update the adjustment unit. This would provide the system with information to maximize the degree of separation between the right and left channels.

***Response to Arguments***

Applicant's arguments filed February 5, 2007 have been fully considered but they are not persuasive.

With respect to claim 1, the Applicant notes that the variable resistor #5 of Ohsawa is a variable resistor for the separation adjustment which is the same item as the first adjustment unit in amended claim 1 of the present invention and is different from the claimed second adjustment unit. The Examiner would like to note that the present claim language does not exclusively limit the second adjustment unit from being the separation adjustment #5 of Ohsawa. The present claim merely states that the second adjustment unit functions to adjust a current amount that flows in the resistance based on a current amount adjusted by the first adjustment unit. It can be clearly seen that the adjustment unit #5 of Ohsawa changes the amount of current flowing through resistors (fig.3 "resistors between ground and nodes P1 and P2") depending on an adjustable resistance value of the adjustment unit #5. If the circuit of figure 3 of Ohsawa were used in combination with the invention of Manlove to provide further control of the channel separation, then the current being adjusted by Ohsawa's second adjustment unit #5 would be based on the output of the circuit of Manlove. The output of Manlove is a direct result of the current amount adjusted by the first adjustment unit #18, hence the second adjustment unit #5 of Ohsawa would adjust a current amount that flows in the resistance based on a current amount adjusted by the first adjustment unit when made in combination with Manlove.

## *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Kurr whose telephone number is (571) 272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JK
JK

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECH... ...ER 2600